

ElectroSense

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Faculty Advisor:

Client: Dr. Venkat Keshav Chivukula

1. Progress of current Milestone (progress matrix)

Task	Completion %	Kayla	Alexis	Marko	To do
1.Compare and select Technical Tools	100%	33%	33%	33%	Completed
2. "Hello world" demo	100%	20%	20%	60%	Process received data through App
3. Resolve Technical Challenges	100%	20%	20%	60%	Process received data through App
4.Compare and select Collaboration Tools	100%	20%	20%	60%	Completed, Continue updating github
5. Requirement Document	0%	0%	0%	100%	Requirement Document
6. Design Document	0%	0%	0%	100%	Design Document
7. Test Plan	0%	0%	0%	100%	Test Plan

2. Discussion (at least a few sentences, ie a paragraph) of each accomplished task (and obstacles) for the current Milestone:
 - Task 1: We have decided on the specific tools we need to use in order to develop our system. The bed sensors connect to an Arduino and each have a respective C++/Arduino library to control their operation. The sensors then send their data to a __ Bluetooth device through the "SoftwareSerial" library. The device outputs that data to a XCode/Swift iPhone app which then receives the bluetooth data using CoreBluetooth, a Swift library. The app then displays the data to the user through a user interface.
 - Task 2: Connected two heart rate sensors to an Arduino alongside a SH-08 bluetooth module. We configured the sensors to display their data to serial and then to the bluetooth module which we have connected to a phone. We have managed to transfer the data to an iPhone using supplier made testing applications. We have also created a demo of the Graphical User Interface in xCode with 6 different menu selections. We have to use the CoreBluetooth library to process the received data now.
 - Task 3: We have managed to have several sessions where our team members learned about the necessary tools and we have gotten used to working in them.
 - Task 4: We have created a github to which we have actively been contributing.
3. Discussion (at least a few sentences, ie a paragraph) of contribution of each team member to the current Milestone:
 - Kayla Mastin: Helped with writing the code for the xCode application as well as documentation.
 - Alexis Haley: Helped with writing the code for the Sensor processing.
 - Marko Vukasinovic: Wrote all the required documentation, created a GitHub for the xCode application for collaboration purposes, created a demo of the Application, wrote the Arduino code for controlling and reading from the Heart Rate sensors, wrote the code for sending the data over bluetooth to a phone.
4. Plan for the next Milestone (task matrix) or
[skip if this is for Milestone 6]

Task	Kayla	Alexis	Marko
1. Implement, test & demo <i>Heart Rate</i>	Assist with Heart Rate Sensor Display Feature	Assist with Sensor/Arduino Programming	Sensor Programming, Implement Bluetooth Communication and make sure gathered data is compatible with app, Display Development
2. Implement, test & demo <i>Pulse Oximetry</i>	Assist with Patient Pulse Oximetry	Assist with Sensor/Arduino Programming	Sensor Programming, Implement Bluetooth Communication and make sure gathered data is compatible with app, Display Development
3. Implement, test & demo Temperature Sensor	Assist with Temperature Sensor	Assist with Sensor/Arduino Programming	Sensor Programming, Implement Bluetooth Communication and make sure gathered data is compatible with app, Display Development

5. Discussion (at least a few sentences, ie a paragraph) of each planned task for the next Milestone or

"Lessons Learned" if this is for Milestone 6

- Task 1: Initially, we were hoping to complete an integrated circuit, connected to a Heart Rate sensor and a Bluetooth module which sends a constant data stream out to a XCode demo application hosted on an iPhone/iPad. However, while we have managed to create and program the integrated Arduino circuit which sends out a signal to a receiving iPhone, we still haven't programmed the XCode application to display the received signal to the user. Therefore, tackling the completion of that cycle will be our highest priority.
- Task 2: The design and implementation of the Pulse Oximetry circuit, code and display will be very similar to the Heart Rate section. Therefore, we predict we will be able to easily complete this task before milestone 2.
- Task 3: The design and implementation of the Pulse Oximetry circuit, code and display will be very similar to the Temperature Sensor section

6. Date(s) of meeting(s) with Client during the current milestone:

10/13/2022, 10/6/2022, 9/29/2022

7. Client feedback on the current milestone

- Approves of our progress on the project so far.
- Gave us guidance on how to improve our documentation as well as create project designs through various tools such as KiCad.

- We plan on continuing the current weekly meeting schedule with him.
- 8. Date(s) of meeting(s) with Faculty Advisor during the current milestone: ...
- 9. Faculty Advisor feedback on each task for the current Milestone
 - Task 1: ...
 - Task 2: ...
 - Task 3: ...
 - Task 4: ...
- 10. Faculty Advisor Signature: _____ Date: _____

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11. Evaluation by Faculty Advisor

- Faculty Advisor: detach and return this page to Dr. Chan (HC 214) or email the scores to pkc@cs.fit.edu
- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

John Smith	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Jane Doe	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Mark Jones	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

- Faculty Advisor Signature: _____ Date: _____